H. E. DUNLAP.

REMOVABLE HEAD STEEL BARREL.

APPLICATION FILED APR. 17, 1917.

1,268,550. Patented June 4, 1918.

Fig. 1.

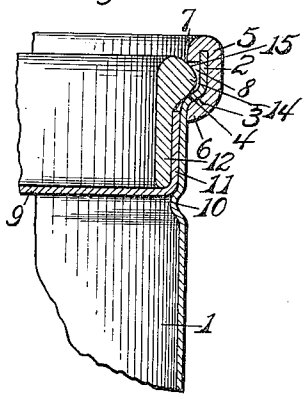


Fig. 2.

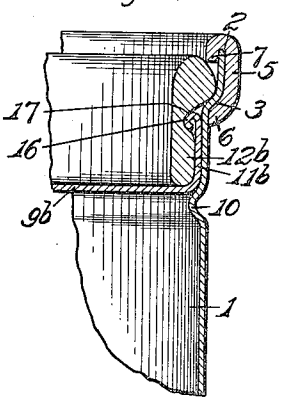


Fig. 3.

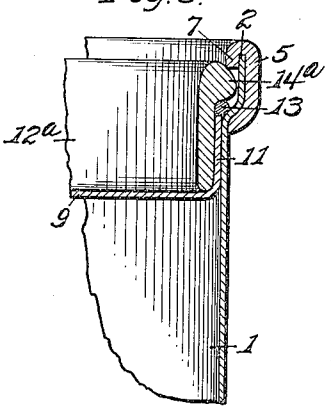


Fig. 4.

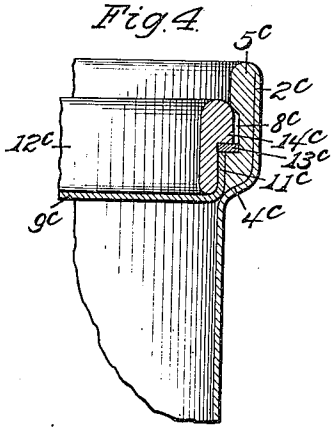


Fig. 5.

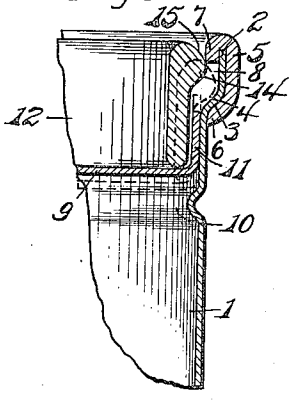
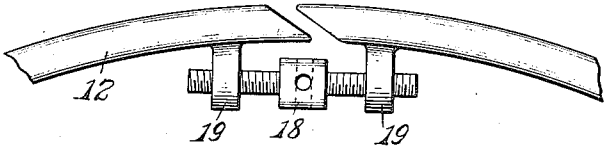


Fig. 6.



Invento

H. E. Dunlap

UNITED STATES PATENT OFFICE.

HERBERT E. DUNLAP, OF WHEELING, WEST VIRGINIA.

REMOVABLE-HEAD STEEL BARREL.

1,268,550. Specification of Letters Patent. Patented June 4, 1918.

Application filed April 17, 1917. Serial No. 162,806.

To all whom it may concern:

Be it known that I, HERBERT E. DUNLAP, a citizen of the United States of America, and resident of Wheeling, county of Ohio, and State of West Virginia, have invented certain new and useful Improvements in Removable-Head Steel Barrels, of which the following is a specification.

This invention relates broadly to sheet-metal receptacles, and more particularly to metallic barrels or similar containers.

The primary object of the invention is to provide a steel barrel or like container having a head which may be readily inserted and removed as occasion requires and which is not only securely retained against chance displacement but also maintained in fluid tight relation to the body of the container.

A still further object is to provide a metallic barrel of the removable-head type having its edge reinforced by a relatively heavy ring or chime disposed in embracing or inclosing relation thereto whereby said edge is effectually protected against injury from rough or careless handling.

A still further object within the contemplation of the invention is to provide a flanged removable barrel head having means associated therewith whereby downward seating pressure is applied to said head simultaneously with the expansion of its flange into close-fitting relation to the barrel body.

With these and other important objects in view, the invention resides in the features of construction, arrangement of parts and combinations of elements which will hereinafter be exemplified, reference being had to the accompanying drawings, in which—

Figure 1 is a detail sectional view of the invention;

Figs. 2 and 3 are similar views illustrating slightly modified forms of locking rings;

Fig. 4 is a similar view showing a modified form of chime and a locking ring therefor;

Fig. 5 is a view similar to Fig. 1 illustrating in full lines the initial or entering position of the locking ring and in dotted lines the final or seated position of said ring; and—

Fig. 6 is a top plan view of a portion of the locking ring, illustrating expanding means therefor.

Referring to said drawings, in which like designating characters distinguish like parts throughout the several views—

1 indicates generally the body of a steel barrel which is flared outward adjacent to its upper end to form an offset marginal edge or rim 2 whereby an external annular shoulder 3 and an internal annular shoulder 4 are provided. Disposed in exteriorly embracing relation to said rim or margin is a chime 5 of relatively heavier material and which is preferably of substantially even thickness throughout, said chime having its lower edge 6 inturned to conformably seat in underlying relation to said external shoulder 3 and having its opposite edge 7 flanged over the edge of said rim and disposed interiorly of the latter, but terminating at a suitably spaced distance from the internal shoulder 4, thereby forming an intermediate internal channel 8.

A seat for a removable barrel head 9 is provided interiorly of the barrel at a suitable distance below the flare or offset by which said shoulders are formed, said seat being preferably constituted by an inwardly pressed rib 10. Said head 9 has an upright peripheral flange 11 which, in the seated position of said head, is adapted to closely nest against or engage that portion of the barrel located between said offset and the seat 10, the thickness of the chime and the extent of the offset being relatively proportioned, as will be noted, to permit of unobstructed introduction and removal of said head past said chime—that is to say, the offset is sufficiently greater in extent than the thickness of the inturned upper edge 7 that ready insertion and removal of the head is permitted.

An open steel expansion ring 12 is designed for mounting in seated clamping relation to the head 9 and for locking said head in position. Said ring preferably has a vertical width, or height, equal to or slightly greater than the distance between the shoulder constituted by the terminus of the chime flange 7 and the upper surface of the body of the head 9 when the latter occupies seated position. The body of said ring is of substantially flat band-like form and has a circumferential projecting rib 14 at or adjacent to its upper edge, which, when said ring is expanded, projects into the channel 8 and interlocks with the superjacent chime flange or shoulder 7. Said rib, or at

least the superfrontal portion thereof, is of inclined or convexly curved form, as shown at 15, and, when said ring is being expanded, said portion is presented to the adjacent nose-like edge or angle of said chime flange. Consequently, as said ring is expanded against said chime flange the said angle rides upon said inclined or curved surface of the ring and serves to force said ring downward for depressing the head 9 to seating position, the lower edge of said ring being seated upon said head, as shown. In other words, expanding force applied to the ring causes the flat body portion of the latter to be forced into pressure-exerting relation to the head-flange 11 and the rib 14 to enter the channel 8; and, as said ring is expanded from its initial or entering position, shown in full lines in Fig. 5, to the final or seated position indicated in dotted lines in said figure, a drawing or wedging force is exerted through the interengaging surfaces of the rib 14 and the chime flange 7 for depressing the ring and the subjacent head 9. While the said chime flange might obviously be formed to present an inclined or beveled face to the inclined or curved surface of the rib, I prefer that it present the sharp edge or angle shown in the drawings, thereby to reduce to a minimum the frictional resistance offered by said engaging parts to expanding movement of the ring.

The outer surface of the expansion ring is preferably shaped to conform as nearly as is practicable to the surfaces to be engaged thereby, as, for instance, the ring disclosed in Figs. 1, 2 and 5 has the under surface of the integral rib adapted for seating upon the shoulder 4 when its body portion is closely seated against the head-flange 11; or, when it is desired to dispose a gasket 13 of compressible material in a position for sealing the joint between said flange and the barrel body, as shown in Fig. 3, the rib 14^a is so proportioned and shaped that, in the final seated position of said ring, it occupies overlying compressing relation to said gasket. In the modification shown in Fig. 2 the head flange is formed with a terminal bead 16 and the ring 12^b has an external annular groove or channel 17 formed therein for the reception of said bead.

In the modified form of the invention disclosed in Fig. 4 an internally disposed chime 5^c is employed, the same being welded at its upper edge to the edge of the barrel rim 2^c and having its lower edge seated upon the internal shoulder 4^c. The thickness of said chime is somewhat less than the extent of the offset by which said shoulder is formed, thereby to cause said shoulder to also afford a seat for the barrel head 9^c. Said chime has an annular channel 8^c formed in its inner face designed for the reception of a circumferential rib or extension 14^c formed on an expansion ring 12^c. As shown in said figure, the head flange 11^c is made of such height that, when the head is seated, its upper edge lies substantially flush with the shoulder afforded at the lower edge of said channel 8^c to form with said shoulder a seat whereon may rest a gasket 13^c which is compressed by the overhanging rib 14^c when said ring is expanded into interlocking relation with said chime.

Any suitable means may be employed for expanding and contracting the expansion ring, the device herein shown being simply disclosed as an example of a simple, practicable and comparatively inexpensive form of means for effecting the desired adjustments. Such device comprises a turnbuckle 18 which has its opposite threaded ends adjustably mounted in radially disposed lugs 19 formed on the inner face of the ring adjacent to the ends of the latter.

What is claimed is—

1. The combination with a sheet-metal barrel, of a head supported thereby, a reinforcing chime of relatively heavier material conformably embracing the barrel adjacent to the marginal edge of the latter and having a portion flanged over and disposed interiorly of said edge in parallelism with its body and terminating at its lower edge in non-engaging relation to said head, and an expansible ring having its body portion seated upon said head and a circumferential projecting portion interlocked with the terminal edge of said chime.

2. The combination with a sheet-metal barrel having an upright marginal edge, of a head mounted below said edge, a chime flanged inward over said edge and having its flange disposed in parallelism with its body and terminating at its lower edge in a downwardly facing shoulder the extent of which is not greater than the thickness of said chime, and an expansible locking ring interposed between said shoulder and said head.

3. The combination with a barrel having an upright outwardly-offset marginal edge, of a head located wholly below said edge, a chime flanged over said edge and having its flange disposed in vertical position interiorly of said edge and terminating at a distance above the edge-defining offset, and an expansible locking ring having a part interposed between said flange and said offset and having a part depending into seated relation to said head.

4. In a barrel, a body having a marginal edge offset with respect thereto, a permanently seated chime conformably embracing said edge exteriorly and interlocked therewith and having its upper edge flanged into interiorly seating relation to the upper portion of said edge and terminating at a spaced distance from the offset thereby to form an

intervening channel, a head seated below said offset, and an expansible locking ring resting upon said head and having a circumferential projecting portion seated in said channel.

5. In a barrel, a body having an offset marginal edge, a chime for reinforcing said edge disposed in permanently seated relation to the offset and affording an interiorly located channel, a head having an upright flange which terminates adjacent to the lower edge of said channel, and an expansible locking ring abutting against the inner face of said flange and having a portion seated in said channel.

6. In a barrel, a body having an offset marginal edge, a chime for reinforcing said edge disposed in permanently seated relation to the offset and affording an interiorly located channel, a head having an upright flange which terminates adjacent to the lower edge of said channel, and an expansible locking ring retaining said head against displacement, said ring having its main body portion located in abutting expanding relation to said flange and having a circumferential rib seated in said channel.

7. In a barrel, a body having an offset marginal edge, a chime for reinforcing said edge disposed in permanently seated relation to the offset and affording an interiorly located channel, a head having an upright flange which terminates adjacent to the lower edge of said channel, and an expansible locking ring retaining said head against displacement, said ring resting upon said head with its main body portion pressing against said flange and having a projecting portion adjacent to its upper edge seated in said channel.

8. In a barrel, a body having an offset marginal edge, a head seated within said body and having an upright flange terminating adjacent to the offset, a one-piece chime conformably embracing and disposed in permanently fixed relation to said edge and terminating interiorly of the latter at a distance above said offset thereby to form an intervening channel, and an expansible locking ring disposed in expanding relation to said flange and having a part seated in said channel.

9. In a barrel, a body having an offset marginal edge, a head seated within said body, a fixed chime conformably embracing said edge and having an upper vertical terminal flange located interiorly of the latter and terminating at a distance above said offset thereby to form an intervening channel, and an expansible locking ring resting upon said head and having a rib seated in said channel.

10. In a barrel, a body having an offset marginal edge, a head seated within said body and having an upright flange terminating adjacent to the offset, a chime conformably embracing and disposed in permanently fixed relation to said edge and terminating at its upper portion in a vertically disposed flange which lies interiorly of said edge and located at a distance above said offset thereby to form an intervening channel, and an expansible locking ring resting upon said head with its main body portion in abutting relation to said flange and having an external annular rib seated in said channel.

11. In a barrel, a body having an offset marginal edge, a head seated within said body and having an upright flange terminating adjacent to the offset, a one-piece fixed chime conformably embracing said edge and terminating interiorly of the latter at a distance above said offset thereby to form an intervening channel, and an expansible locking ring disposed in expanding relation to said flange and having a circumferential rib seated in said channel.

12. In a barrel, a body having an offset marginal edge, a head seated within said body and having an upright flange terminating adjacent to the offset, a fixed chime ring conformably embracing said edge and terminating interiorly of the latter at a distance above said offset thereby to form an intervening channel, and an expansible locking ring disposed in expanding relation to said flange and having a circumferential rib seated in said channel and presenting an inclined surface to said chime.

13. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a one-piece chime ring conformably embracing and disposed in permanently fixed relation to said edge, said chime having its upper edge flanged over to lie interiorly of said marginal edge and terminating at a distance from said internal shoulder thereby to form an intervening channel, said chime also having its lower edge turned into underlying relation to said external shoulder, a head seated within said body below said channel, and an expansible locking ring overlying said head and having a portion adapted to seat in said channel when said locking ring is expanded.

14. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a chime ring disposed in permanently-fixed conformably-embracing relation to said edge, said chime having its upper edge flanged over to lie interiorly of said marginal edge and having its flange terminated at a distance from said internal shoulder thereby to form an intervening channel, said chime also having its lower edge turned into underlying relation to said external shoulder, a head seated within said body and having an upright peripheral flange which terminates adjacent

to said internal shoulder, and an expansible locking ring disposed in expanding relation to said flange and having a portion seated in said channel.

15. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a one-piece chime ring disposed in permanently fixed embracing relation to said edge, said chime having its upper edge flanged over and disposed vertically to lie interiorly of and closely against said marginal edge and terminating at a distance from said internal shoulder thereby to form an intervening channel, said chime also having its lower edge turned into underlying relation to said external shoulder, a head seated within said body and having an upright peripheral flange which terminates adjacent to said internal shoulder, and an expansible locking ring disposed in expanding relation to said flange and having a circumferential rib seated in said channel.

16. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a chime disposed in permanently fixed embracing relation to said edge, said chime having its upper edge flanged over to lie interiorly of said marginal edge and terminating at a distance from said internal shoulder thereby to form an intervening channel, said chime also having its lower edge turned into underlying relation to said external shoulder, a head seated within said body and having an upright peripheral flange which terminates adjacent to said internal shoulder, and an expansible locking ring disposed in expanding relation to said flange and having a circumferential rib seated in said channel, said rib presenting an inclined face to the flanged edge of said chime.

17. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a one-piece chime ring disposed in permanently fixed embracing relation to said edge, said chime having its upper edge flanged over to lie interiorly of said marginal edge and terminating at a distance from said internal shoulder thereby to form an intervening channel, said chime also having its lower edge turned into underlying relation to said external shoulder, a head seated within said body and having an upright peripheral flange which terminates adjacent to said internal shoulder, and an expansible locking ring disposed in expanding relation to said flange, said ring having its external diameter increased at its upper edge forming a projecting portion which seats in said channel.

18. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a chime disposed in permanently fixed exterior embracing relation to said edge and having a part interlocked with said external shoulder, the upper edge of said chime being flanged over and lying interiorly of said marginal edge and being terminated at a distance above said internal shoulder thereby to form an intervening channel, a head mounted within said body and occupying a position wholly below said internal shoulder, and an expansible locking ring resting upon said head and having a portion seated in said channel.

19. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a chime disposed in permanently fixed exterior embracing relation to said edge and having a part interlocked with said external shoulder, the upper edge of said chime being flanged over said marginal edge and being terminated interiorly of the latter at a distance above said internal shoulder thereby to form an intervening channel, a head mounted within said body and having an upright flange which is terminated adjacent to said internal shoulder, and an expansible locking ring of flat band-like form engageable with said head and said flange and having a circumferential projecting portion adapted to seat within said channel when said ring is expanded.

20. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a one-piece chime ring permanently embracing said edge exteriorly and having a part interlocked with said external shoulder, the upper edge of said chime being flanged inward and downward over said marginal edge and being terminated interiorly of the latter at a distance above said internal shoulder thereby to form an intervening channel, a head having an upright peripheral flange mounted within said body below said internal shoulder, and an expansible locking ring of flat band-like form in cross section resting upon said head with its main body portion engaging said flange and having a portion seated in said channel.

21. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a one-piece chime permanently fitted in embracing relation to said edge and having a part interlocked with said external shoulder, the upper edge of said chime being flanged inward and downward over said marginal edge and being terminated interiorly of the latter at a distance above said internal shoulder thereby to form an intervening channel, a head having an upright peripheral flange mounted within said body below said internal shoulder, and an expansible locking ring resting upon said head with its main body portion engaging said flange and having a circumferential rib disposed in said channel.

22. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a chime embracing said edge exteriorly and having a part interlocked with said external shoulder, the upper edge of said chime being flanged over said marginal edge and having its flange disposed vertically against the inner wall of said edge, said flange being terminated at a distance above said internal shoulder thereby to form an intervening channel, a head mounted within said body and having an upright flange which is terminated adjacent to said internal shoulder, an expansible locking ring engaging said head and having a projecting portion seated within said channel, and a gasket interposed between said projecting portion and said shoulder for sealing the joint between said flange and said body.

23. In a barrel, a body having an offset marginal edge, the offset forming external and internal shoulders, a chime embracing said edge exteriorly and having a part interlocked with said external shoulder, the upper edge of said chime being flanged over said marginal edge and being terminated interiorly of the latter at a distance above said internal shoulder thereby to form an intervening channel, a head mounted within said body and having a portion located adjacent to said internal shoulder, an expansible locking ring engaging said head and having a projecting portion seated within said channel, and a gasket overlying the joint between said head and said body, said gasket being compressed beneath said projecting portion of said ring.

24. A removable head construction for barrels, including, in combination with the barrel body, an outwardly offset margin or rim, an inwardly pressed rib located at a spaced distance below said rim, a head having a peripheral flange fitting within said body and seated upon said rib, a chime closely and permanently seated exteriorly of said rim and having its upper edge flanged over and lying inward of the latter and terminating at a distance above the offset which defines said rim, the interior diameter of said flanged edge exceeding the exterior diameter of the head flange, and an expansible locking ring resting upon said head and having a portion disposed between said offset and the flanged edge of the chime and interlocking with the latter.

25. A removable head construction for barrels, including, in combination with the barrel body, an outwardly offset margin or rim, a head having a peripheral flange fitting within said body and terminating at its upper edge below the offset which defines said rim, means below said rim affording a seat for said head, a chime fitted exteriorly of said rim in fixed position and having its upper edge flanged over and lying inward of said rim and terminating at a distance above the offset which defines said rim, the interior diameter of said flanged edge exceeding the exterior diameter of the head flange, and an expansible locking ring resting upon said head and having a circumferential rib disposed in underlying relation to said flanged edge of the chime.

In testimony whereof, I affix my signature in presence of two subscribing witnesses.

HERBERT E. DUNLAP.

Witnesses:
W. F. KEEFER,
J. S. PORTER.